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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,630	12/25/2003	Phillip D. Bondurant	QUEST1120	1629
32912	7590	08/03/2004		EXAMINER
HAYWARD A. VERDUN				PHAM, HOA Q
609 ALDER AVE. NE.				
BAIN BRIDGE ISLAND, WA 98110			ART UNIT	PAPER NUMBER
			2877	

DATE MAILED: 08/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/707,630	BONDURANT ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Hoa Q. Pham	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on \_\_\_\_\_.  
 2a) This action is **FINAL**.                            2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-16 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_ is/are allowed.  
 6) Claim(s) 1-16 is/are rejected.  
 7) Claim(s) \_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 12/25/03 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_.  
 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_.  
 5) Notice of Informal Patent Application (PTO-152)  
 6) Other: \_\_\_\_\_.

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to because the “**black boxes**” in figure 1 are not labeled.
2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the limitation “**reflecting the light beam off the surface of said reformer tube, and rotating a light source to produce a ring of light on the surface said reformer tube**” in claims 5, 8, 13, 15, and 16 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of

any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

3. The disclosure is objected to because of the following informalities:
  - a. The copending application data should be updated in page 1 of the present specification.
  - b. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o).

Correction of the following is required: the limitation "reflecting the light beam off the surface of said reformer tube, and rotating a light source to produce a ring of light on the surface said reformer tube" in claims 5, 8, 13, 15, and 16 are not supported by the specification.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification does not set forth how the optical elements are arranged so as to provide steps of "reflecting the light beam off the surface of the reformer tube, and rotating a light source (LED or Laser) to produce a ring of light on the surface of the reformer tube".

5. Claims 5, 8, 13, 14, 15 and 16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. As mentioned above, there is no teaching how the steps "reflecting the light beam off the surface of the reformer tube, and rotating a light source (LED or Laser) to produce a ring of light on the surface of the reformer tube" are performed so as to enable any person skilled in the art to make and use the same.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-4, 6, 8-12, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fraignier et al (4,967,092) in view of Astheimer (3,602,596).

Regarding claims 1 and 16, Fraignier et al discloses an apparatus for optical checking the inner profile of a tube or bore which has all the features of the present invention except the light beam is a collimated light beam; however, such a feature is known in the art as taught by Astheimer. Astheimer, from the same field of endeavor, teach the use of both convergent light or collimated light (figures 1 and 2 or 5 and 7); however, Astheimer suggests that using collimated light has an advantage if it is desired

to move the reflecting cone independently of the rest of the optical system (column 3, lines 31-33). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to replace lens (11) of Fraignier et al by a collimated lens as suggested by Astheimer.

Regarding claim 2, Fraignier et al teaches the use of a conical reflector (12) (column 3, lines 39-40).

Regarding claims 3, Astheimer teaches that the reflecting surface (8) is parabolically curved (column 4, lines 34-37). It would have been obvious to replace the conical reflector of Fraignier et al by a reflector of Astheimer because they would function in the same manner.

Regarding claim 4, see figure 1 of Fraignier et al for rotating mirror (7).

Regarding claim 6, Fraignier et al teaches the use of a laser source (column 2, lines 63-64).

Regarding claims 9-10, Fraignier et al teaches that the light beam reflected from the reflector (12) converges onto the inner wall of the tube (column 3, lines 41-47).

Regarding claim 11, Astheimer teaches the use of a parabolic surface as mentioned in claim 3 above.

Regarding claim 12, see claim 4 above.

8. Claims 5, 7, 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fraignier et al and Astheimer as applied to claims 1-4, 6, 8-12, and 16 above, and further in view of Nishimura et al (JP-403075544).

Claims 5, 7, 13-15 are rejected based on the interpretation of the examiner, as understood by Examiner, Fraignier et al teaches that the mirror 7 is rotated and the light source is fixed to produce a ring of light on the surface of the tube. Nishimura teaches different way to produce a ring of light on the surface of the tube by rotating the whole system (30) which includes the light source (21) and the reflecting mirror (31) (see figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to rotate the whole optical detecting system of Fraignier et al instead of rotating the reflecting mirror as taught by Nishimura et al because they are equivalent in function. Substitution one for another is generally recognized as being within the level of ordinary skill in the art.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Following references are relative to bore inspection: Drabarek et al (6,462,815), Bieman et al (5,933,231), Cruickshank (5,099,115), West (4,861,984), Pryor et al (4,465,374 and 4,305,661), Milana (4,440,496), and Dan (4,199,258).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoa Q. Pham whose telephone number is (571) 272-2426. The examiner can normally be reached on 7:30AM to 6 PM, Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on (571) 272-2800 ext. 77. The fax

phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Hoa Q. Pham  
Primary Examiner  
Art Unit 2877

HP  
July 30, 2004